to discover the law that bodies take a longer time to float in winter and the beginning of spring than in the summer and end of autumn. That a drowned man floats on his face and a woman on her back is mentioned, and it is left to be implied that in case of bodies having been thrown into the water after death this does not hold good. With the same minuteness every possible circumstance connected with death by fire is gone into at length, the presence of traces of ashes in the mouth and nose being described as "a crucial test of death by burning."

The chapters on poison are, as might be expected in the absence of dissection, the most unsatisfactory in the book. Practically very little light is thrown on the distinguishing symptoms arising from the effects of different poisons. The common test applied to most is that of inserting a silver needle washed with a decoction of *Gleditschia sinensis*, into the mouth of the corpse. If, when after a time this is withdrawn, it should be stained a dark colour, and remain so stained after it has been again washed with the decoction, poison has been the cause of death. Another proof is furnished by the effect which a pellet of rice, after having been some time in the mouth of the corpse, has on poultry who can be induced to swallow it. The commonest poisons are said to be opium, arsenic, and certain noxious essences derived from herbs. But besides these, other things are taken by suicides and given by murderers to cause death. In some of the southern provinces there exists a particular kind of silkworm, known as the Golden Silkworm, which is reared by miscreants to serve either purpose as occasion may require. Quicksilver, which is also used with fatal effect, is either swallowed, or, like the "juice of cursed hebenon" which sent Hamlet's father to his account, is poured into the ear. The torture necessarily consequent on this last method of using it must be so excessive that it may safely be assumed that it finds favour only with murderers. Swallowing gold, on the other hand, seems to be the favourite way of seeking death with wealthy suicides. It has been held by some writers that the expression "swallowing gold" is but a metaphorical phrase meaning "swallowing poison," just as when a notable culprit is ordered to strangle himself he is said to have had "a silken cord" sent to him. But the "Coroners' Manual" puts it beyond question that gold is actually swallowed, and it prescribes the remedies which should be adopted to effect a cure. Gold not being a poison, death is the result either of suffocation or laceration of the intestines. When suffocation is imminent, draughts of strained rice-water, we are told, should be given to wash the gold downwards, and when this object has been attained, the flesh of partridges, among other things, should be eaten by the patient to "soften the gold" and thus prevent its doing injury. Silver is also taken in the same way. But though wealthy Chinamen thus find a pleasure in seeking extinction by means of the precious metals, they have never gone the length of pounding diamonds to get rid of either themselves or their enemies after the manner of Indian potentates.

ROBERT K. DOUGLAS

ZOOLOGY IN JAPAN

A CORRESPONDENT in Tokio sends us the following:—During the late summer and autumn some good work has been done in the ornithological way. Mr. P. L. Jouy, of the Smithsonian Institution, collected extensively in the region of Mount Fujiyama, at Chiu-senji Lake, near the celebrated shrines of Nikko, and on Tateyama Range, between the borders of the provinces of Shinshiu and Hida. A large number of beautifully prepared skins, with a good deal of information regarding the breeding habits of some of the rarer birds, is the result, which will be recorded in the February number of the *Chrysanthemum*, a magazine published at Yokohama, appearing in enlarged form with the commencement of this year. An article contributed by Capt. Blakiston in the January number, follows up those of his for September, October, and November, 1882, on ornithological work in Yezo during the past summer; in which is noticeable the occurrence of *Locustella certhiola* (Pall), and *Phylloscopus borealis* (Blasius) on that island; and the discovery of a new species of *Motacilla* (probably described by Seebohm in the *Ibis* for January, 1883), allied to *M. ocularis* (Swinhoe) and *M. amurensis* (Seebohm), which has hitherto somehow been mixed up with *M. lugens* of the "Fauna Japonica," which latter is now found to be —to quote Capt. Blakiston's words (*Chrysanthemum*, January, 1883, p. 31)—"a species unique in its genus, having in the adult state the same appearance winter and summer, and in which the young pass at once before their first winter into the adult dress."

Messrs. Owston, Snow, and Co.'s otter hunters at the Kuril Islands have also during the past season added some new localities for Japan birds. The specimens are in the hands of Capt. Blakiston, and will be duly mentioned in the following number of the *Chrysanthemum*, as additional notes to the "Birds of Japan," *Trans. As. Soc. Japan*, vol. x. part I (noticed in NATURE, vol. xxvi. p. 362).

In the way of *mammalia* late investigation points to the distinctness of Yezo from Japan proper. The Rev. Père Heude, who is now engaged upon a revision of the *Cervidæ* of Eastern Asia, has come to the conclusion that the common deer of Yezo is not *C. sika* of the "Fauna Japonica," but *C. manchuricus-minor*, or an undescribed species. Two parts are already published—very creditably got up at the Mission Press at Sikawei, near Shanghai—cf. "Mémoires concernant l'Histoire Naturelle de l'Empire Chinois," others being promised to follow.

NOTES

THE following is the list of fifteen candidates recommended for election by the Council of the Royal Society:—Surgeon-Major James Edward Tierney Aitchison, M.D., James Crichton Browne, M.D., LL.D., Surgeon-Major George Edward Dobson, M.B., James Matthews Duncan, M.D., Prof. George Francis Fitzgerald, M.A., Walter Flight, D.Sc., Rev. Percival Frost, M.A., David Gill, LL.D., Charles Edward Groves, F.C.S., Howard Grubb, F.R.A.S., John Newport Langley, M.A., Arnold William Reinold, M.A., Roland Trimen, F.L.S., F.Z.S., John Venn, M.A., John James Walker, M.A.

THE loss sustained by mathematical science in the premature death of Henry Stephen Smith is still fresh in the minds of our readers. They will find their best consolation in the fact that his successor in Oxford may possibly be Prof. Sylvester. Such an opportunity of recovering for England the services of one of her two greatest mathematicians is not likely to recur, and will, we doubt not, be eagerly turned to advantage. It has been a humiliating thought to many to whom the highest interest of science is dearer than the prosperity of mere mediocrity that, of the two greatest mathematicians that England has produced in the nineteenth century, one has altogether and another almost been obliged to seek for refuge in a foreign land.

UNIVERSAL regret will be felt at the sad intelligence which has just reached England by telegram, from Madeira, of the untimely death of Mr. William Alexander Forbes, B.A., Fellow of St. John's College, Cambridge, and Prosector to the Zoological Society of London. Mr. Forbes left England in July last, along with Mr. McIntosh and Mr. Ashbury, upon what was expected to be a three or four months' expedition in a steam-yacht up the river Niger. He died of dysentery at Shonga on January 14, aged 28.

Three months ago Mr. Raphael Meldola, as retiring President of the Essex Field Club, gave an interesting address, which is now printed in a separate form, on "Darwin and Modern Evolution." It gives a clear and well-condensed account of Darwin's life and work. The following extract concerning the first publication of the theory of natural selection at the Linnean Society is of historical interest, and also, we think, of some instructive value :—"Mr. Wallace has narrated to me that one of his correspondents, a well-known entomologist, wrote to say that it was a general remark in natural history circles, with respect to the paper, that it was much to be regretted that the author had not more confined himself to statements of fact!" This shows that the naturalists of the Linnean Society at that time had the same intolerance of anything like speculative brain-spinning which still finds occasional expression. But to-day we have to thank the sagacity of the greatest of naturalists that, while cautious of speculation, he nevertheless courted it as a friend to the highest interests of science, while leaving "the well-known entomologists" to shun it as the worst of enemies. The truth is that in biology, as in all other branches of science, unless the only aim of a worker is to accumulate knowledge of details, he is bound to resort to hypotheses as feelers after principles. On the other hand, of course, speculation, like fire, while the most valuable of servants, may also be the most dangerous of masters. The truest scientific judgment, therefore, consists in using speculation as not abusing it; and if in particular cases it is asked how much latitude is thus to be allowed to speculative thinking, the answer must be that this is just the question which in all particular cases it requires the truest scientific judgment to decide. All that can be said, as a matter of general principle, is that quite as much and even more harm may arise from an over-nervousness of deductive method in biology, as may arise from an over-confidence in them; and also that the theory of evolution—at least in our opinion—is now sufficiently well established to admit of being used deductively in no stinted measure, without danger of violating the best methods of scientific procedure.

The great and deserved success which has attended the Girls' Public Day School Company has now led to the formation of a similar company for establishing schools for boys. A meeting, under the presidency of Lord Aberdare, was held on the 24th inst. at the rooms of the Society of Arts, at which the objects of the company were explained. The basis of the new schools is that of a self-supporting company, independent alike of Government and charitable aid. It is stated that premises will shortly be secured in Kentish Town, where the first school will be opened in a few months.

Capt. C. E. Dutton, of the United States Geological Survey, who spent half of last year in Hawaii studying the volcanic phenomena there, and whose researches among the plateaux of Utah have brought to light so many interesting phases of volcanic action in that region, is about to undertake the exploration of a still more extensive volcanic region. He is organising his forces for a summer campaign in the Cascade Range, beginning at the southern end in California, among the volcanic piles of Mount Shasta, and working northwards across Oregon to the remote peaks of Mounts Hood and Rainier, in Washington Territory. In this way a preliminary survey of the region will this year be made, and the information will be gained that will serve as the basis for future more detailed exploration. That vast region contains possibly the most colossal outpouring of volcanic matter anywhere to be seen in the world. Geologists will rejoice that it is now to be systematically examined by one so competent as Capt. Dutton, who has specially trained himself for the task. The American Congress is to be congratulated on the enlightened spirit in which these surveys of the Western Territories are conceived and carried out.

The Central Swedish Meteorological Observatory, in Stockholm, has issued a request, signed by Baron Nordenskjöld, calling upon those who may witness meteoric phenomena to send minute particulars of the same to him. He requests that the following details may be noted :—Time, duration, direction as well as height above horizon, whether the meteor had a tail, emitted smoke, burst, or simply disappeared from view, whether any sound and any fall of objects were observed. He also requests that a drawing of the phenomena may if possible be forwarded. In conclusion, he says: "There often appears a peculiar dry mist or 'sun-smoke' over extensive tracts of land in Sweden, sometimes accompanied by a remarkable smell extending for hundreds of square miles. The nature of this phenomenon has not yet been ascertained. As I am informed that it was recently noticed in certain parts of Norrland, I beg that any observer of the same will forward all particulars he may possess."

Geologists will learn with regret that Mr. Alexander Murray, who has so long and so ably directed the Geological Survey of Newfoundland, feels himself compelled by advancing years and enfeebled health to retire from his duties. For many years he was one of the late Sir William Logan's chief officers in the Geological Survey of Canada, where he long ago gained his geological spurs. His iron constitution and indomitable enthusiasm have carried him through more hardships than have fallen to the lot of almost any living geological explorer, but they have been borne with a quiet courage and good-humoured indifference altogether admirable. May he find now the honourable rest and recognition to which his long devotion to the colony so justly entitles him. He will be succeeded by his present second in command, Mr. James P. Howley, in whose experienced hands the Surveying Department of Newfoundland will be excellently administered.

Prof. Tyndall will on Thursday next, May 3, at the Royal Institution, give the first of a course of three lectures on "Count Rumford, Originator of the Royal Institution."

Although the circulation of books from Newcastle-upon-Tyne Free Library has not quite kept up this second year, yet the Report, with its account of the handsome new building, is a very satisfactory one. The carrying on of education in various ways, in combination with the Science and Art Department and with the City and Guilds of London Institute, by literary and commercial classes, including even a competition in oratory supported by a "Bequest," is valuable work that ought naturally to fall, as it has done here, into the same hands as control the library. The method of encouraging juvenile readers by permitting the use of the whole library to the more intelligent is good where these readers are sufficiently known to the librarian. There is no doubt that the true reason is given for the large increase in the issue of fiction, viz. that the committee have added to their stock in that class in a proportion twice as great as in any other class. "The love of" fiction "increases as much as the" fiction "itself increases."

The Mitchell Library at Glasgow has taken the only method of repressing this circulation of fiction, viz. that of not buying the books! In this well-endowed and promising institution, only open five years, yet now containing 45,000 volumes, there are only 374 volumes of fiction; yet so great is the demand for this class of reading that every volume has been issued ninety-eight times, *i.e.* changed twice every week throughout the year! This library, however, supported mainly by the splendid bequest of 70,000*l.* left by Mr. Stephen Mitchell in 1874, has purposely relegated this department and that of branch libraries to the 1*d.* rate, able to produce in Glasgow 11,000*l.* a year, while itself takes the form of a great reference department, already the largest free library in Scotland, and promising in a second five years to be among the most important collections of books in the kingdom. One of the best functions of a public library in any town is to become the centre to which will gravitate all publications of any local value or interest. For since every subject or author is naturally connected with some locality, if this were well carried out all over the kingdom, information would gradually be as well arranged and as readily accessible as in a cyclopædia. The collections undertaken by the Mitchell Library at Glasgow are (1) the works of Burns and other Scotch poets and verse writers, one object of which will be "to preserve local dialects, local customs, and local memories"; (2) all papers which in any way illustrate the city's growth and life; (3) specimens of early Glasgow printing. The Scotch Covenanters is another subject in which a collection of publications has been commenced. Still nearly one-fifth of the volumes in the Mitchell Library, and more than one-fifth of the volumes in circulation, belong to the department of Arts and Sciences. The attendance of readers has been quite as large as the present premises will accommodate.

THE Council of the Society of British Artists opened their gallery in Suffolk Street on Sunday last to the members of the Sunday Society. A similar privilege has been granted for Sunday next, the 29th inst., when the public will be admitted during the afternoon and evening by free tickets, to be had by all who apply, inclosing a stamped and addressed envelope, to the Honorary Secretary, 8, Park Place Villas, W. The eighth annual meeting of the Sunday Society will be held in the Princes' Hall, Piccadilly, on May 5, under the presidency of Sir Coutts Lindsay.

WE have received the Memorandum of Association of the National Smoke Abatement Institution, signed by the Dukes of Westminster and Northumberland, Lord Mount-Temple, Sir W. F. Pollock, Sir Lyon Playfair, Sir Hussey Vivian, and Mr. Ernest Hart. The objects of this institution are already well known to all our readers.

THE diplomas and scholarships of the Spring Session of the Royal Agricultural College, Cirencester, were conferred on the successful students on the 19th inst. Among those on whom the diplomas were conferred were Messrs. Sen and Hossein, the two Indian scholars first sent to the College by the Government of India. It is worthy of note that one of these gentlemen, Mr. Sen, obtained the highest number of marks ever reached for the diploma.

A LARGE collection of weapons and implements from the Stone Age in Japan has, we are informed, arrived in London. The collector, Herr von Siebold, is an official of the Austrian Embassy in Japan, and has resided for many years in the latter country. The collection embraces, we believe, a large number of flint arrowheads, celts, axes, as well as numerous specimens of pottery taken from shell-heaps in various parts of Japan. The well known *magatama* and *kudatama* ornaments are also well represented. Except a few in the Christy collection in the British Museum, and a small collection given by Herr von Siebold himself to the Copenhagen Museum, the Japanese Stone Age is not, we believe, fairly represented in any archæological museum in Europe.

MORE than 250 years ago the English residents in Japan were perplexing themselves, as they are to-day, on the subject of earthquakes. In the diary of Richard Cocks, just published for the Hakluyt Society by Mr. Maunde Thompson, we find, under date November 7, 1618, the following entry:—"And, as we retorned, about 10 a clock, hapned a greate earthquake, which caused many people to run out of their howses. And about the lyke hower the night following hapned an other, this cuntrey being much subject to them. And that which is comunely markd, they allwais hapen at a hie water (or full sea); so it is thought it chanseth per reason is much wind blowen into hollow caves under grownd at a loe water, and the sea flowing in after, and stoping the passage out, causeth these earthquakes, to fynd passage or vent for the wind shut up."

NEWS from Mr. Stanley dating down to the middle of December has just been received at Brussels. Stanley had reached the African coast, and, after having augmented his party by 223 natives from Zanzibar, under the leadership of the Belgian traveller, M. de Cambier, had started for Vivi, the first station established by the International African Society. At Vivi preparations were being made for the construction of a railway line to the landing-place on the river, but the work proceeded slowly, owing to the total absence of beasts of burden. Up to now seven stations have been established—Vivi, Isanghila, Manyangha, Lutété, Stanley Pool, Ibaka Nkoutou, and Bolobo; the latter is distant about 700 miles from the mouth of the Congo, and is the last one established. Of the four small steamers taken to Africa three had been launched, and the fourth was being transported from Manyangha to Leopoldsville. The seven stations already seem to become centres of civilisation, and exercise a beneficial influence upon the surrounding native tribes. Horned cattle had been introduced at Vivi, and at Leopoldsville agricultural work had begun, cabbage and lettuce thriving exceedingly in that locality. At Bolobo a fertile and well-populated country was reached, which extends far beyond the limits of De Brazza's journey. The progress of the latter was contemplated with equanimity, yet fears were entertained regarding the claims of the Portuguese Government, and also concerning the freedom of way and commerce.

SEVERAL Swedish officers have recently left Europe, being invited to join Mr. Stanley on the Congo.

THE Swedish Academy of Sciences has offered a reward to the vessel which first brings despatches, &c., to the meteorological observing party wintering at Spitzbergen.

THE despatch of the Swedish corvette *Vanadis* on a voyage round the world is contemplated. Several men of science will accompany her, among whom is Dr. Stolpe, the well-known ethnographist.

ON the 13th inst., between 8 and 9 a.m., a remarkable mirage was seen at Ölsta, in the parish of Sala, Sweden. It displayed distinctly a town in Eastern style situated by the sea, with temples and minarets, while to the left a forest of fine cypress trees was seen. In front was a train in motion, while a body of soldiers appeared marching along a road, with their bayonets flashing in the sun. The whole was visible for nearly an hour, when it gradually faded away.

THE French Academy of Sciences, at its meeting on Monday last, selected MM. Bonnet and Resal as candidates for filling the place vacated by the decease of M. Liouville, in the Bureau des Longitudes.

LAST week M. de Lesseps delivered several speeches at the Sorbonne and in other places, showing that the Roudaire Inland Sea will be useful and profitable, and the speaker met with very decided success. On Monday, M. Cosson, his usual antagonist, delivered a long speech, pointing out the danger of the operations, but the French Academy of Sciences took no notice of it, and no commission being appointed the matter dropped.

AT the March meeting of the Russian Physical Society, M. Sreznevsky read a communication on an instrument largely employed but the theory of which is from being established, namely, the hygrometer of Saussure. Its scale, usually traced by comparison with a psychrometer, varies with the month when the comparison is made, a difference which is probably due to influence of temperature, as already pointed out in 1783 by Saussure. The matter, however, has never yet received thorough investigation. The cause of the elongation of the air in consequence of an increase of moisture remained also unexplained. It might be explained now, however, as it is known that the air contains water in a liquid state in its microscopical cavities. The curvature of the surfaces of these microscopical meniscuses, which depends upon the tension of the vapour that incloses the air, must influence the tension on its surface and therefore change its length. Both these causes can be expressed mathematically, at least for the simplest cases, and if we admit a state of equilibrium we can easily see that the tension of the meniscuses on the surface of the air is a function of the relative moisture, and is proportionate to the logarithm of the moisture. The elongation of the air would thus be a function of the relative moisture of a capillary constant, of the coefficients of elasticity of the air, and of the suspended weight.

DR. ARNOD DODEL PORT has recently published the final part of his incomparable "Atlas der physiologischen Botanik." The six plates which constitute it illustrate: *Cystosira barbata*, I.Ag. (a genus of sea wracks), the archegonium and antheridium of *Marchantia* (one of the Liverworts), *Pinus laricio* (third plate), *Lavatera trimestris*, two plates (a genus of Malvaceæ), and *Datura stramonium*, L. (the common thorn-apple). Together with the plates is published the final part of the descriptive text.

IN the current number of the *Annales de l'Extrême Orient*, M. de Lucy-Fossarien draws attention to the interesting fact in connection with education in Japan, that a large part of its development is due to private assistance. In the past five years forty-two millions of francs have been given voluntarily by private persons for the extension of education. Even this large sum, however, is probably less than the value of the land, houses, &c., given in particular districts for the use of schools.

THE tenth annual Report of the Museum für Völkerkunde, at Leipzig, has just been published, and gives an interesting account of the flourishing condition of this excellent ethnographical institution. The Emperor of Germany again contributes a large sum to the funds of the Museum, and the Crown Prince of Austria has become a member of the institution; the collections have been largely increased, and there are no less than 106 gentlemen at work in various parts of the world extending the connections of and acquiring material for the Museum.

AN earthquake was observed at Tashkend on March 31, at 7 a.m. The shocks were of considerable violence. In the Etna district the volcanic phenomena continue. A violent earthquake occurred at Riposto on the 5th inst., and on the following day oscillations were felt also at Catania, Paternó, and Randazzo. A thick volume of steam emanates from the crater as well as from lateral openings. At Salinella the mud crater had resumed its activity and had caused considerable destruction of property.

DR. PAUL GÜSSFELDT of Berlin, the eminent traveller who started for South America some time ago in order to make geological and other scientific researches in the Cordilleras, reports that he is well satisfied with the results of his journey, and that he had discovered a glacier of the first order in the style of the Aletsch glacier. The glacier is between fifteen and twenty miles in length. Dr. Güssfeldt has measured many summits trigonometrically, made a collection of alpine plants (amongst them a wild potato from above the glacier), and another of geological specimens. On December 31 he intended to leave for the Argentine Republic; thence he proposed to return to Maipu, and then investigate the Aconcagua district.

A NUMBER of unusually bright and large meteors were observed at Prossnitz (Austria) and other places in the neighbourhood on the evening of March 13 last, between 6 and 11 p.m. Some lit up the whole sky and lasted five or six seconds. No trace of any meteoric stone has as yet been discovered.

THE additions to the Zoological Society's Gardens during the past week include a Leopard (*Felis pardus* ♀) from India, presented by Mr. A. P. Marsden; an Ocelot (*Felis pardalis*) from South America, presented by Mr. C. G. Leith; a Ring-tailed Coati (*Nasua rufa*) from South America, presented by Mr. E. Dance; two Porto Rico Pigeons (*Columba corensis*) from the West Indies, a Common Boa (*Boa constrictor*) from Brazil, presented by Mr. C. A. Craven, C.M.Z.S.; an Osprey (*Pandion haliaetus*) from Australia, presented by Dr. Plummer; a White-bellied Sea Eagle (*Haliaetus leucogaster*) from Australia, presented by Mr. E. P. Ramsay, C.M.Z.S.; three Common Rheas (*Rhea americana*) from Monte Video, presented by Mr. John Fair; a Green Turtle (*Chelone viridis*) from the West Indies, presented by Mr. Fleetwood Sandeman; a Leopard (*Felis pardus* ♂) from India, a Small Hill Mynah (*Gracula religiosa*) from Southern India, a Greater Sulphur-crested Cockatoo (*Cacatua galerita*) from Australia, a Gannet (*Sula bassana*), British, deposited; an Iceland Falcon (*Falco islandus*) from Iceland, purchased.

OUR ASTRONOMICAL COLUMN

SCHMIDT'S VARIABLE STAR NEAR SPICA.—On June 6, 1866, Dr. Julius Schmidt remarked to the south and east of Spica a conspicuous star which he estimated 5·4m., and which was wanting in Argelander's *Uranometria*. It was brighter than the neighbouring reddish-yellow star, 68 Virginis. He found its place for 1866·0, R.A. 13h. 27m. 33s., Decl. −12° 31′·5. It is Lalande 25086, estimated 6·7 on May 10, 1795, and Piazzi XIII. 126, called 8m. in the catalogue, but 7 and 6·7 in the *Storia Celeste*. It was not observed by Bessel nor Santini, but occurs in Lamont's Zone 355, 1846, May 22, when it was rated 8m. In Bremicker's Berlin Chart it is 7m., and 6·7 in Heis. But a special point of interest about this object is Schjellerup's inference that it is identical with the 19th star in Virgo in Ptolemy's Catalogue, as indicated in a note at p. 160 of the translation of the Catalogue of Abd-al-Rahman al-Sûfi, which the Persian astronomer says was of the smaller fifth magnitude, nearer the sixth, though Ptolemy calls it "absolutely of the fifth." In Baily's edition of Ptolemy's Catalogue in vol. xiii. of the *Memoirs of the Royal Astronomical Society*, the star in question is No. 515, and there identified with 68 *i* Virginis: it is called *ὁ νοτιώτερος τῆς ἑπομένης πλευρᾶς*. Schjellerup, translating from Al-Sûfi, says: "La 19e est la méridionale du côté postérieur du quadrilatère, après *al-simâk*, s'inclinant vers le sud; elle est des moindres de la cinquième grandeur; Ptolémée la dit absolument de cinquième, mais elle est plus près de la sixième. Entre elle et *al-simâk* vers le sud-est, il y a environ une coudée et demie et entre elle et la 17e il y a la même distance. Avec *al-simâk* et la 17e elle forme un triangle isoscèle, cette étoile étant au sommet. La latitude de cette étoile, indiquée dans le livre de Ptolémée, se trouve erronée, parce que, au ciel, elle se fait voir autrement qu'elle ne tombe sur le globe. Car, d'après cela, elle devrait se faire voir au nord d'*al-simâk*, tandis que, en verité, elle se trouve au sud." Al-simâk is Spica, and the 17th star appears to be 76 Virginis. Baily in his Catalogue places the 19th star in longitude 178°, with 3° 0′ south latitude, but in a note he points out that in the edition of Ptolemy, published by Liechtenstein at Venice in 1515, the latitude is 0° 20′ and *north*; with the remark, "The star 68 Virginis agrees with the position given by Ptolemy; but it is difficult to make it accord with the description, as being in the 'latus sequens' of the quadrilateral figure."

Both the variable and 68 Virginis are found in Mr. Stone's Southern Catalogue, the epoch of which is 1880. The auxiliary quantities for the reduction of positions for this year to the assigned epoch of Ptolemy's Catalogue, the first of Antoninus, are, in the usual notation—

A ... 168° 47′·3 ... A′ ... 191° 0′·8 ... θ ... 9° 40′·6,